DRAFT

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT

ROYAL TINE RANCH GAME FARM EXPANSION

October 1998

Montana Fish, Wildlife & Parks
Region 1
490 North Meridian Road
Kalispell, MT 59901

Flathead Lake

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INTRODUCTION

Montana Fish, Wildlife & Parks (FWP) is required to perform an environmental analysis in accordance with the Montana Environmental Policy Act (MEPA) for each proposal for projects, programs, legislation, and other major actions of state government significantly affecting the quality of the human environment (Administrative Rules of Montana [ARM] 12.2.430). FWP uses environmental assessments (EAs) in the game farm licensing process to identify and evaluate environmental impacts of a proposed game farm. EAs also determine whether the impacts would be significant and whether, as a consequence, FWP would perform a more detailed environmental impact statement (EIS).

When preparing an EA, FWP reviews environmental impacts of the Proposed Action, impacts of the No Action Alternative, and impacts of other alternative actions which include recommended and/or mandatory measures to mitigate the project's impacts. A mitigated EA includes alternatives with enforceable requirements (stipulations) which reduce impacts of the Proposed Action. The EA may also recommend a preferred alternative for the FWP decision-maker.

The Royal Tine Ranch game farm is located approximately 2 miles south of the town of Bigfork, Montana. Two enclosures are included in the game farm: 80-acre enclosure for elk and deer on the west side of Highway 35; and 520-acre enclosure for elk on the east side of the highway. The Proposed Action is to add additional species (i.e., male bighorn sheep, male mountain goats, mule deer, and white-tailed deer) to the 520-acre existing game farm enclosure; no additional acreage would be added to the existing game farm enclosure for this Proposed Action. Due to the applicant's request to amend his application to add different species to the game farm, FWP elected to prepare this Supplemental EA for the proposed modification to the game farm license.

OBJECTIVES

This Supplemental EA has been prepared to serve the following purposes in accordance with FWP MEPA rules (ARM 12.2.430):

- ensure that FWP uses natural and social sciences in planning and decision making;
- to be used in conjunction with other agency planning and decision-making procedures to make a determination regarding the Proposed Action;
- assist in the evaluation of reasonable alternatives and the development of conditions, stipulations, and modifications to the Proposed Action,
- determine the need to prepare an EIS through an initial evaluation and determination of the significance of impacts associated with the Proposed Action;
- ensure fullest appropriate opportunity for public review and comment on the Proposed Action; and
- examine/document the effects of Proposed Action on the quality of the human environment.

PUBLIC PARTICIPATION

Public involvement in the EA process includes steps to identify and address public concerns. The Draft Supplemental EA will be available for public review and comment from October 31, 1998 until 5 pm November 13, 1998 from the Region 1 FWP office at the address listed below. Comments regarding this EA should be submitted to the same address.

Mr. Michael Quinn
Montana Fish, Wildlife & Parks
P.O. Box 1095
Bigfork, Montana 59911
Phone (406) 755-2614

PROPOSED ACTION AND ALTERNATIVES

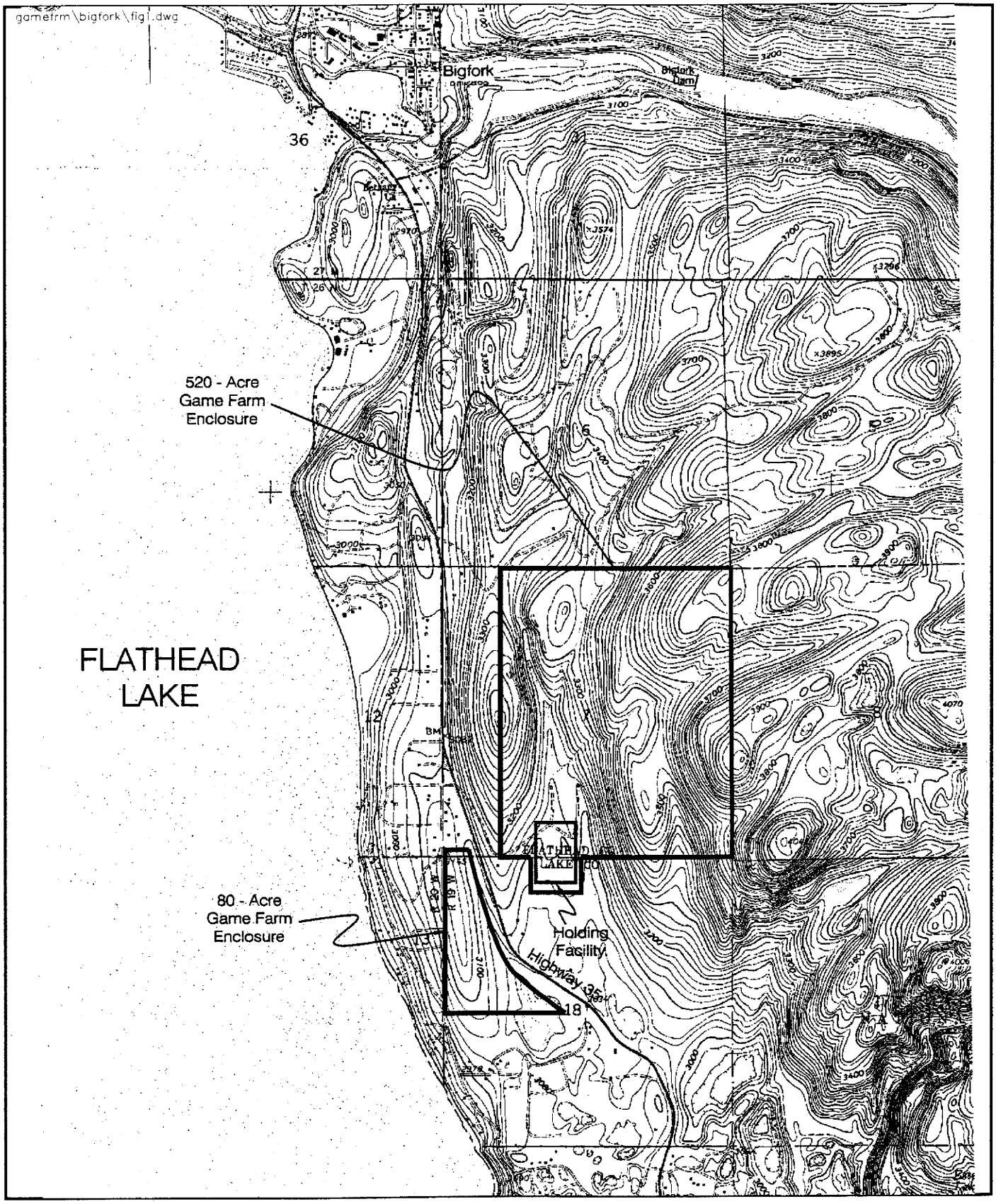
PROPOSED ACTION

On July 13, 1998, FWP acknowledged a written request by Mr. Justin Haveman to amend his game farm application to include male mountain goats, bighorn sheep, mule deer, and white-tailed deer at his licensed game farm referred to as the Royal Tine Ranch. Mr. Haveman and Mr. Doug Averill are the designated licensees for the game farm. The Royal Tine Ranch game farm is located approximately 2 miles south of Bigfork, in Flathead and Lake Counties, Montana **(Figure 1)**. Two separate enclosures are included in the 600-acre game farm: 80 acres for the enclosure west of the Highway 35 in Section 18 (T26N, R16W), and 520 acres for the enclosure east of Highway 35 in most of Section 7 and a small portion of Section 18 (T26N, R16W).

This Supplemental EA addresses the applicant's request to amend his application to add up to four male mountain goats and up to four male bighorn sheep, and to place mule deer and white-tailed deer in the 520-acre portion of the game farm. No additional acreage would be added to the existing game farm area under the Proposed Action. The 80-acre enclosure would continue to be used for elk and deer.

In 1996, an EA and Decision Document were prepared by FWP for a 520-acre expansion to the initial 80-acre game farm. The 1996 EA evaluated placement of ≥70 male elk on the 520-acre expansion area. A game farm license was granted to Messrs. Haveman and Averill on June 19, 1998 for elk, mule deer, and white-tailed deer; however, the since the 1996 EA evaluated only elk for the 520-acre enclosure, deer are not currently allowed in this area. This Supplemental EA evaluates the possibility of adding mule deer and white-tailed deer to the 520-acre enclosure. The current license for the Royal Tine Ranch game farm includes nine stipulations that apply to the game farm in addition to general requirements of game farm statutes and rules for FWP and the Montana Department of Livestock (DoL).

The quarantine and handling facility approved for the original license would be used for the additional animals. A handling facility for the 520-acre enclosure is in the southern portion of the game farm (**Figure 1**). The quarantine facility is located within the 80-acre enclosure west of Highway 35. For the Royal Tine Ranch game farm, the licensees would breed, sell, and dispose of the domestic animals in accordance with Montana game farm and disease control requirements stipulated in Montana statute and administrative rules. The applicant proposes to use the sheep, goats, and deer for purposes of breeding stock, meat and antler production, trophy sales or fee shooting, and viewing for ranch guests and tours.



From USGS 7.5' Bigfork Quad

October 1998

N

0 Feet 2500

Site Map
Game Farm EA
Haveman Royal Tine Game Farm
Flathead and Lake Counties, Montana
FIGURE 1

MAXIM 9731687.370

The existing exterior fence for the 520-acre enclosure consists of 8-foot high, 6-inch mesh, high-tensile big game fencing, supported by 11-13-foot long, $2^{3/8}$-inch diameter steel pipe set 3-4 feet into the soil and spaced at 20-foot intervals. Corner posts and braces are of $2^{7/8}$-inch diameter pipe. Five drive-through gates exist at the 520-acre enclosure, consisting of 2-inch diameter structural metal tubing frame, 8 feet high, reinforced with hog paneling or similar material, and double-latch and single-chain locks. An electric hot-wire has been placed around the game farm fence at height of about 4-5 feet from ground surface and 1 foot away from the outside of the fence to limit ingress of wild animals. The electric fence is divided into two sections with flashing light indicators that are intended to show when a break in the connection has occurred, thus signaling a possible fence integrity problem.

ALTERNATIVES

One alternative (No Action Alternative) is evaluated in this Supplemental EA. Under the No Action Alternative, FWP would not issue a modified license for new animal species at the Royal Tine Ranch game farm as proposed. Therefore, no mountain goats or bighorn sheep would be placed on the game farm, and mule deer and white-tailed deer would be limited to the 80-acre enclosure on the west side of Highway 35. Implementation of the No Action Alternative would not preclude other activities allowed under local, state and federal laws to take place at the game farm site.

PURPOSE AND NEED OF THE PROPOSED ACTION

The primary purpose of the Proposed Action would be to provide male mountain goats, male bighorn sheep, mule deer, and white-tailed deer for viewing by guests and tours in the 520-acre enclosure. In addition, the game farm would continue to be a commercial enterprise to provide breeding stock, meat and antler production, and trophy sales or fee shooting of the game farm animals.

ROLE OF FWP AND DEPARTMENT OF LIVESTOCK

FWP is the lead agency in preparing this Supplemental EA for the proposed project. This document is written in accordance with the Montana Environmental Quality Council (EQC) MEPA Handbook and FWP statutory requirements for preparing an EA under Title 75, Chapter 1, Part 2 Montana Code Annotated (MCA) and FWP rules under ARM 12.2.428 et seq.

FWP shares regulatory responsibilities for new and expanding game farms with the Montana Department of Livestock (DoL). The DoL is responsible for regulating the health, transportation and identification of game farm animals. During the application process, all quarantine area plans and specifications are submitted to the DoL for approval and inspection of the proposed quarantine facility. No licenses are issued without such approval and inspection.

AFFECTED ENVIRONMENT

The Royal Tine Ranch game farm is located on mountain slopes near the east side of Flathead Lake approximately 2 miles south of Bigfork, Montana (**Figure 1**). This section summarizes environmental resources evaluated in this Supplemental EA that are relevant to the addition of mountain goats, bighorn sheep, mule deer, and white-tailed deer to the existing elk game farm operation.

Game farm statutes require a licensee to account for animals at least twice per year and to verify that all animals are tagged annually. Domestic animals that escape the game farm (i.e., egress) and wild animals that enter the enclosure (i.e., ingress) must be reported immediately. Compliance with these requirements may be difficult in the 520-acre enclosure at the Royal Tine Ranch game farm. There have been suspected incidents of deer ingress into the 520-acre enclosure, and it has been difficult for the licensee to verify the presence or absence of ingress deer. As described above, the Royal Tine Ranch game farm is approved by FWP to have elk in both enclosures, and mule deer and white-tailed deer in the 80-acre enclosure.

WATER RESOURCES

The 520-acre game farm site is located on west-facing lower slopes of the Mission Mountains near the east side of Flathead Lake. Several intermittent drainage channels extend through the game farm, with water flowing southward into two small closed-basin ponds or lakes near Highway 35 ("Elk Farm Lake" and "Potato Lake"). Water in these ponds does not appear to discharge to Flathead Lake; the spill point for the lakes would send overflow water to another closed basin (Deer Flats). Such overflow, however, occurs only during extremely high runoff events. Several small natural and man-made depressions in the primary channel in the game farm contain water most of the year. Surface water flows out of the game farm only during extreme precipitation and/or snowmelt events. During the spring of 1996 and 1997, unusually wet conditions resulted in a 25-foot rise of water levels in the two lakes referenced above; the combined surface area of the two lakes more than quadrupled in 1997.

Groundwater in the game farm area is present in relatively shallow glacial deposits and in underlying bedrock of the Precambrian-age Belt Series (argillite). The glacial deposits range in thickness from 10 feet to more than 180 feet and are predominant in Section 18, T26N, R19W. The 520-acre game farm in Section 7 (T26N, R19W) is located primarily on the bedrock material described above.

Private domestic wells completed in the study area range in depth from about 50 to 565 feet, with an average depth of 350 feet from 11 wells. The Idlewise Trailer Court is located near the west side game farm enclosure and has a well for multiple-users that is 440 feet deep. Wells are completed in the deeper bedrock material, which generally is confined due to upper unfractured bedrock and to some clayey zones in the glacial deposits. The two lakes in Section 18 (T26N, R19W) are located on glacial deposits and probably are not a significant recharge source to the bedrock aquifer in which the private wells are completed. Water for game farm animals in the 520-enclosure comes from a combination of sources: groundwater well, water in depressions along drainage bottom, and a spring.

VEGETATION RESOURCES

The game farm is comprised of forested habitat, but the majority of the area has been previously logged and is currently managed for timber production. Tame pasture (Timothy and red clover) has been planted in created forested openings. In general, most of the trees within the proposed game farm are young and less than 12-inches in diameter. Herbaceous vegetation productivity within the forested habitat is variable depending upon degree of canopy closure, and probably ranges from a couple hundred pounds per acre to an estimated 1,000 pounds per acre in recently cleared sites. The game farm also contains rock outcrops within the forested habitat that produces very little herbaceous vegetation. Average annual forage production within the 520-acre enclosure is estimated to range from 260,000 to 390,000 pounds.

The forested habitat in this area is comprised primarily of Douglas fir, grand fir, ponderosa pine, western larch, black cottonwood, and aspen. Woody undergrowth on the game farm includes western snowberry, red osier dogwood, and alder. Herbaceous vegetation is primarily introduced grasses and forbs such as Timothy and red clover. There is a poorly developed riparian area within the game farm that originates at a spring in a moist meadow. The water flow in this drainage is intermittent and water surfaces periodically to form pools; some of these pools are man-made excavations. The herbaceous vegetation in these areas is characteristic of moist areas. Many of the deciduous trees and shrubs are associated with these moister sites.

Noxious weeds were present on the game farm site. Spotted knapweed grows along logging roads and in some of the areas disturbed by recent logging, but it was not abundant or widespread. Canada thistle also grows in areas disturbed by recent logging.

FISH/WILDLIFE RESOURCES

The game farm is currently grazed by approximately 38 domestic elk (based on a August 1998 site visit), but is licensed to graze more than 70 elk. The game farm application that requests the addition of mountain goats and bighorn sheep states that 80 to 100 elk would be held in the entire game farm operation. Although there is no critical big game winter range or migration corridor through this area, this area is used by a variety of big game and other wildlife species. This general area supports 10 to 15 white-tailed deer per square mile, and elk and moose may occasionally pass through the area. Bighorn sheep are present on Wildhorse Island in Flathead Lake approximately 16 miles to the southwest. Other wild sheep herds occur in mountain ranges at greater distances from the game farm.

This area represents good mountain lion habitat due the abundance of deer and elk in the surrounding mountains. There is a resident mountain lion population and they would be expected to occur in the area on a year-long basis. This area also supports a sizable black bear population. Use of this area by bears will vary seasonally and between years. Bears are expected to seasonally move through this area depending upon forage availability and in some years they may make considerable use of low elevation sites, such as immediately surrounding the game farm site. A bear is apparantly responsible for the death of one elk in the 520-acre enclosure at Royal Tine Ranch.

Bald eagles (federally-listed threatened species) are breeding residents, spring fall migrants, and winter residents along the Flathead River north of Bigfork and along Flathead Lake. Eagles are known to nest along the Flathead River upstream from the game farm site. Peregrine falcons (endangered) are potentially migratory through this area, but they are not known to nest in this area. The gray wolf and grizzly bear are two federally-listed (threatened) wildlife species occurring in the general area of the proposed game farm. Both these species potentially could pass through the forested habitat surrounding the game farm.

RISK/HEALTH HAZARDS

The game farm fence is intended to be game-proof and was constructed according to state regulations and standards. Shooting of elk is allowed on the game farm and may occur with the proposed bighorn sheep, mountain goats, and deer at an unspecified frequency.

ENVIRONMENTAL CONSEQUENCES

Only resources that have potential adverse effects from the Proposed Action are summarized in this section. A detailed discussion of environmental consequences is contained in *Part II* of this EA.

WATER RESOURCES

The addition of up to four bighorn sheep, four mountain goats, and mule/white-tailed deer is not expected to significantly change hydrologic conditions that exist within and downgradient of the 520-acre game farm enclosure. The primary impact to water quality in the project area appears to occur from the west side game farm enclosure and from septic systems associated with subdivisions, trailer parks, and individual residences. Groundwater quality has a minor potential of being affected from runoff water that collects in the lakes near Highway 35 during extreme precipitation events. Any suspected problems with water quality as a result of the game farm operation would be addressed by the Montana Department of Environmental Quality (DEQ).

VEGETATION RESOURCES

The Proposed Action plans to place up to four adult male bighorn sheep, up to four adult male mountain goats, and an unspecified number of mule and white-tailed deer on approximately 520 acres of the existing game farm. Under currently authorized conditions of the game farm, more than 70 adult elk are licensed to graze in the game farm enclosure. During an August 1998 site visit of the game farm, a total of 38 elk reportedly were present in the 520-acre enclosure. Productivity of this site is sufficient to support 38 adult elk, four adult bighorn sheep, and four adult mountain goats on a year-long basis without substantial supplemental feed. However, foraging activity by elk, sheep and goats would be expected to alter the plant communities, and productivity of the game farm site would likely decline somewhat. Dense vegetative cover, combined with the size of the 520-acre enclosure, make it very difficult to visually observe all game farm animals.

Eight adult sheep and goats would consume about 14,600 pounds of forage per year in addition to that taken by elk. The 38 adult elk are estimated to consume approximately 152,570 pounds of forage annually. Combined annual forage consumption for 38 elk, four sheep, and four goats would be approximately half of the annual forage production. Assuming a total annual forage production of 300,000 pounds, a total of about 70 elk could potentially graze in the 520-acre game farm without supplemental feed, including the four mountain goats and four bighorn sheep.

Weed species such as spotted knapweed and Canada thistle would be expected to increase slightly in abundance under moderate grazing pressure. Noxious weeds were apparent in disturbed areas during the August 1998 site inspection of the proposed game farm site. There is a weed control program in place on the game farm, and year-long grazing by game farm animals would probably not result in additional soil disturbance beyond that resulting from logging.

FISH/WILDLIFE RESOURCES

The Proposed Action plans to place up to four male bighorn sheep and four male mountain goats on approximately 520 acres of land. In addition, mule deer and white-tailed deer are proposed to be placed in the 520-acre enclosure. During a August 1998 site visit, 38 domestic adult bull elk were reportedly in the 520-acre enclosure. The application specifies that a maximum of 100 elk could be placed on the game

farm. Impacts to wild ungulates associated with fencing 520 acres (passage barrier and displacement) have already occurred and are not a part of the Proposed Action. The game farm does not include any perennial streams and would not likely impact any aquatic life resources.

There is a possibility that wild deer may enter the enclosure especially during periods of drifted snow or deep snow accumulation in the winter. Deer have also been documented to crawl under game-proof fencing at sites dug by coyotes. Wild elk do pass through this area on occasion and may be attracted to the game farm especially during the rut. If wild elk were to enter the game farm and become exposed to domestic elk, bighorn sheep, and mountain goats, the wild elk would likely be destroyed in the enclosure rather than be released back to the wild. These impacts may affect individuals but not populations. Bighorn sheep are capable of climbing or jumping 8-foot high fencing if stressed during the rut. Portions of the existing game farm fence cross 25 to 30 degree slopes that result in some topographic advantage to wild and domestic big game animals attempting to jump the fence. Egress of sheep during winters when Flathead Lake is frozen would place Wildhorse Island within travel distance of the game farm. Escaped sheep could also potentially migrate to existing sheep herds in nearby mountain ranges.

Mountain lions and black bears are expected to pass through this area and may be attracted to the game farm due to the concentration of domestic elk and/or the presence of elk feed. At least one bear has already entered and exited the enclosure and mortally wounded a bull elk. Lions and bears are capable of entering the enclosure and although live capture and removal is possible, it is not without risks. This may affect individuals but not populations. In addition, gray wolves and grizzly bears could potentially pass through this area and be attracted to the game farm elk. Wolves and bears are capable of digging under or climbing over the game fence. Live capture and removal of a trespassing wolf or bear is possible. However, this is not without risks to the animal, and the loss of a wolf and bear from local populations in this area may be a cumulative impact to these species. In addition, bears that are chronic offenders may be purposely removed from the population either by lethal control, or by live capture and relocation to a zoo. The proposed game farm is not likely to cause impacts to bald eagles and peregrine falcons.

There is a potential of domestic bighorn sheep or mountain goats to carry or become infected with a contagious wildlife disease or parasite such as tuberculosis, and then coming in contact (through-the-fence, nose-to-nose, nose-to-soil, or ingress/egress) with wild deer, elk, or other wildlife. It is also possible that diseases and parasites carried by wild elk or deer could be introduced to domestic elk, deer, bighorn sheep, or mountain goats.

RISK/HEALTH HAZARDS

Brucellosis and tuberculosis are potentially transmittable from bighorn sheep and mountain goats to cattle and from cattle to bighorn sheep and mountain goats. In addition, the bighorn sheep and mountain goats proposed for introduction into the game farm could potentially carry A Strain *Pastuerella* and lungworms (*Protostrongylus* spp.). The main disease issue will be if the domestic mountain goats and bighorn sheep are carrying A Strain *Pastuerella*. Diagnostic tests for this bacteria are available and can be conducted by taking nasal swabs from restrained live animals. However, a negative test does not necessarily confirm the absence of A Strain *Pastuerella* in sheep and goats that would be released at the proposed game farm.

Bighorn sheep exposed to A Strain *Pastuerella* usually die within a few days of exposure, and sheep entering the enclosure could be quarantined for a week to verify that they are not infected. Mountain goats, however, are carriers of the disease and should be treated with antibiotics prior to entry. *Protostrongylus* can be treated using an antihelmetic. There is also a risk of disease being passed from bighorn sheep and mountain goats to domestic elk. The risk of disease being passed from bighorn sheep

and mountain goats to other domestic livestock would be minimal if the fence integrity is maintained and appropriate mitigation measures are followed.

If tuberculosis or brucellosis were to be transmitted from domestic bighorn sheep, mountain goats, or domestic elk to wild elk and deer, hunters field dressing wild elk and deer would be subject to some risk of infection. Bears, wolves, and lions attracted to the game farm area by domestic animals and feed could pose a minor risk to local residents.

Shooting in the game farm enclosure is a human safety concern with respect to residents that live near the game farm site. This issue was addressed in the 1996 EA and Decision Document for the 520-acre elk game farm expansion. A stipulation was included in the Decision Document and license that requires signs to be placed on the fence to warn of possible risks. In addition, the 1996 EA suggested that a no-shooting zone may be warranted along a portion of the south game farm fence near a trailer court; this would also provide a tree buffer between the game farm and residences.

CUMULATIVE EFFECTS

The Proposed Action would not result in potential impacts that are individually minor but cumulatively considerable. Minor cumulative effects could occur to local populations of wild wolves or bears if one or more of these species entered the game farm and was killed or relocated. Minor cumulative effects also could occur as a result of adding the proposed bighorn sheep and mountain goats to the existing domestic elk. Cumulative effects from past, present and reasonably foreseeable activities in all resource areas would be similar to those described for the Proposed Action.

EA CONCLUSION

MEPA and game farm statutes require FWP to conduct an environmental analysis for game farm licensing as described in the Introduction of this Summary. FWP prepares EAs to determine whether a project would have a significant effect on the environment. If FWP determines that a project would have a significant impact that could not be mitigated to less than significant, the FWP would prepare a more detailed EIS before making a decision.

Based on the criteria evaluated in this Supplemental EA, an EIS would not be required for the modified licensing of the Royal Tine Ranch game farm. The appropriate level of analysis for the Proposed Action is a mitigated EA because all impacts of the Proposed Action have been accurately identified in the EA, and all identified significant impacts would be mitigated to minor or none.

MITIGATION MEASURES

The mitigation measures described in this section address both minor and significant impacts identified in this Supplemental EA. Potential minor impacts from the Proposed Action are addressed as mitigation measures that are strongly recommended to remain in compliance with state and federal environmental laws, but not required. FWP previously required stipulations to mitigate potentially significant impacts resulting from licensing the 520-acre expansion of the Royal Tine Ranch game farm (see Decision Document dated September 30, 1996, and game farm license issued June 19, 1998). These nine stipulations are:

(1) No supplemental feeding will occur within 100 feet of any fence or stream channel.

(2) Licensees shall follow commonly accepted sanitation practices regarding methods for disposing of, and final destination of, carcasses and other infectious waste.

(3) There shall be regular and frequent fence inspections by licensees to locate potential areas of ingress/egress.

(4) To prevent ingress or egress, the fence will have a gate system designed so that ingress of wild animals or egress of game farm animals would not occur when trail rides enter or leave the game farm. All gate design and locations must be approved prior to construction by FWP.

(5) Licensees shall report both ingress and egress to FWP immediately upon discovery, determine and remedy the problem immediately.

(6) If fence integrity appears to be a problem upon inspection of construction at outcrops and adverse slopes, adjustments will be made as agreed with FWP.

(7) The condition and percent cover of vegetation within the game farm will be monitored by the regulatory agency and managed by the licensees under good stewardship practices.

(8) Licensees must comply with all appropriate zoning regulations.

(9) The fence will be signed by the licensees to warn the public of possible risks. The sign, shape and language on the signs will be mutually agreed to between the administering agency and licensees.

The mitigations presented below are in addition to those required above for the existing game farm license:

REQUIRED STIPULATIONS

The following stipulations are imposed by FWP for the Royal Tine Ranch game farm and are designed to mitigate significant impacts identified in the EA to below the level of significance:

(1) Place a 3/8-inch steel cable or steel pipe cross-bar at the top of the perimeter fence for the 520-acre enclosure to prevent fence compression should a tree fall on the fence. This cable would also add to the effective fence height and reduce the chances of ingress and egress of domestic and wild big game species. If fence integrity or ingress/egress becomes a problem, adjustment of fence requirements to include double fencing, additional electrification, or increased height may become necessary.

(2) The licensee must immediately comply with any disease control, surveillance, and/or testing requirements issued by the state veterinarian.

(3) Monitor the game farm fence on a weekly basis and immediately after major snow and rain events to ensure fence integrity is maintained. If snow buildup reduces the effective height of the perimeter fence to less than 8 feet, the licensee must remove snow on both sides of the fence, or increase the fence height, where necessary.

(4) The licensee must bring all game farm animals in the 520-acre enclosure to the handling facility annually for census, to check identification, and verify status of ear tags. Mule deer and white-tailed deer are not allowed in the 520-acre enclosure because it is too difficult to bring them in for identification and verification, and to differentiate the deer from possible ingress.

The stipulations listed above are imposed to mitigate potentially significant risk to wildlife posed by the proposed game farm from concerns related to diseases, fence integrity from falling trees, and the lack of a game farm representative that lives at the 520-acre enclosure site. Risk to wildlife from contact between game farm animals and wild game is potentially significant due to the site being located in an area currently utilized by wild game, the rugged terrain, and proximity to trees. Information provided by the stipulations would also help both the licensee and FWP to address ingress and egress incidents and to minimize contact between wild and domestic animals. These stipulations, in addition to fencing requirements, are expected to reduce the risk to wildlife to below significant.

(5) *The game farm licensee must administer an antibiotic to sheep and goats prior to placement of the animals in the game farm. The prescribed antibiotic is to be determined in consultation with the state veterinarian.*

(6) *The risk of escaping bighorn sheep interbreeding with wild sheep can be eliminated by castrating domestic bighorn sheep prior to entering the enclosure.*

The two stipulations above are imposed to mitigate a potentially significant hybridization and disease (A Strain *Pasteurella*) risk from game farm bighorn sheep and mountain goats. During the breeding period, some sheep would tend to have a strong desire to climb the game farm fence (to escape the dominant animals).

(7) *Shooting shall not occur in the direction of nearby residences, and no shooting shall occur in and around the holding facility associated with the 520-acre enclosure (see Figure 1).*

This stipulation is imposed to mitigate a potentially significant risk to public health and safety due to the proximity of residences to the game farm site.

RECOMMENDED MITIGATION MEASURES

The following mitigation measures address minor impacts identified in the EA that are likely to result from the Proposed Action.

Water Resources

- Maintain a reasonable stocking rate in the game farm to mitigate potential impacts to surface water quality. Potential water quality impacts also could be minimized by disposing dead animals and excess fecal matter at a site that is isolated from surface water and groundwater (disposal must meet county regulations for solid waste).

- Utilize best management practices (BMPs) where surface water may exit the game farm site during extreme precipitation events to minimize the quantity of and improve the quality of water leaving the site. The BMPs may include earth berms, straw bale dikes, vegetative buffer zones, and/or silt fences.

Vegetation Resources

- Monitor the proposed game farm site for invasion of noxious weeds and treat affected areas in a timely manner.

- Provide supplemental feed and minerals to the game farm animals at least during winter to alleviate excessive browsing in preferred shrubs.

Fish/Wildlife Resources

- Store hay, feed, and salt away from exterior fences or enclose in bear-resistant containers or buildings. Other standard bear mitigation measures may be appropriate.

- Feed game farm animals at interior portions of the enclosure and not along the perimeter fence. Due to the presence of both grizzly and black bears in this area, it is extremely important to limit the exposure of game farm animal feed to bears.

- Remove dead animals, excess fecal material, and waste feed from the game farm and deposit at an approved site not likely to be used by humans, domestic animals, and wild animals.

Risk/Health Hazards

- The game farm mitigation measures listed above for the Fish/Wildlife section are applicable to this section, too. In addition, risk of disease epidemic or heavy parasite infections among domestic bighorn sheep, mountain goats, deer, and elk can be minimized by maintaining a reasonable game farm animal stocking rate in relation to the enclosure size, periodic removal of manure from concentration areas, and development of a disease immunization and parasite treatment protocol as applicable to domestic elk, deer, bighorn sheep, and mountain goats.

PART I. GAME FARM LICENSE APPLICATION

ENVIRONMENTAL ASSESSMENT CHECKLIST

Montana Fish, Wildlife & Park's authority to regulate game farms is contained in sections 87-4-406 through 87-4-424, MCA and ARM 12.6.1501 through 12.6.1519.

1. **Name of Project:** Royal Tine Ranch Game Farm Expansion

   Date of Acceptance of Completed Application: July 13, 1998

2. **Name, Address and Phone Number of Applicant(s):**

   Mr. Justin Haveman
   319 Sylvan Drive
   Bigfork, Montana 59911
   (406) 837-3557

3. **If Applicable:**

   Estimated Construction/Commencement Date: No additional fencing proposed.

   Estimated Completion Date: N/A

   Is this an application for expansion of existing facility or is a future expansion contemplated?

   This is an application to amend an existing game farm license to add two new animals species to the 520-acre enclosure -- bighorn sheep and mountain goats (up to 4 animals of each species), and to place mule deer and white-tailed deer to the 520-acre enclosure.

4. **Location Affected by Proposed Action (county, range and township):**

   Flathead and Lake Counties
   Most of Section 7, Township 26 North, Range 19 West
   Small portion in north Section 18, Township 26 North, Range 19 West

5. **Project Size:** Not applicable to this project; no expansion of existing enclosure size.

   (a) Developed:
   residential....._____ acres
   industrial....._____ acres

   (b) Open Space/Woodlands/Areas....___ acres

   (c) Wetlands/Riparian Areas..... _____ acres

   (d) Floodplain..._____ acres

   (e) Productive:
   irrigated cropland._____ acres
   dry cropland..... _____ acres
   forestry....._____ acres
   rangeland..... _____ acres
   other....._____ acres

6. Map/site plan:

The following map is included in the introductory summary of this EA:

Figure 1: Location Map

7. Narrative Summary of the Proposed Action or Project including the Benefits and Purpose of the Proposed Action:

On July 13, 1998, FWP acknowledged a written request by Mr. Justin Haveman to amend his game farm application to include male mountain goats, bighorn sheep, mule deer, and white-tailed deer at his licensed game farm referred to as the Royal Tine Ranch. Mr. Haveman and Mr. Doug Averill are the designated licensees for the game farm. The Royal Tine Ranch game farm is located approximately 2 miles south of Bigfork, in Flathead and Lake Counties, Montana **(Figure 1)**. Two separate enclosures are included in the 600-acre game farm: 80 acres for the enclosure west of the Highway 35 in Section 18 (T26N, R16W), and 520 acres for the enclosure east of Highway 35 in most of Section 7 and a small portion of Section 18 (T26N, R16W).

This Supplemental EA addresses the applicant's request to amend his application to add up to four male mountain goats and up to four male bighorn sheep, and to place mule deer and white-tailed deer in the 520-acre portion of the game farm. No additional acreage would be added to the existing game farm area under the Proposed Action. The 80-acre enclosure would continue to be used for elk and deer.

In 1996, an EA and Decision Document were prepared by FWP for a 520-acre expansion to the initial 80-acre game farm. The 1996 EA evaluated placement of ≥70 male elk on the 520-acre expansion area. A game farm license was granted to Messrs. Haveman and Averill on June 19, 1998 for elk, mule deer, and white-tailed deer; however, the since the 1996 EA evaluated only elk for the 520-acre enclosure, deer are not currently allowed in this area. This Supplemental EA evaluates the possibility of adding mule deer and white-tailed deer to the 520-acre enclosure. The current license for the Royal Tine Ranch game farm includes nine stipulations that apply to the game farm in addition to general requirements of game farm statutes and rules for FWP and the Montana Department of Livestock (DoL).

The quarantine and handling facility approved for the original license would be used for the additional animals. A handling facility for the 520-acre enclosure is in the southern portion of the game farm (**Figure 1**). The quarantine facility is located within the 80-acre enclosure west of Highway 35. For the Royal Tine Ranch game farm, the licensees would breed, sell, and dispose of the domestic animals in accordance with Montana game farm and disease control requirements stipulated in Montana statute and administrative rules. The applicant proposes to use the sheep, goats, and deer for purposes of breeding stock, meat and antler production, trophy sales or fee shooting, and viewing for ranch guests and tours.

The existing exterior fence for the 520-acre enclosure consists of 8-foot high, 6-inch mesh, high-tensile big game fencing, supported by 11-13-foot long, $2^{3/8}$-inch diameter steel pipe set 3-4 feet into the soil and spaced at 20-foot intervals. Corner posts and braces are of $2^{7/8}$-inch diameter pipe. Five drive-through gates exist at the 520-acre enclosure, consisting of 2-inch diameter structural metal tubing frame, 8 feet high, reinforced with hog paneling or similar material, and double-latch and single-chain locks. An electric hot-wire has been placed around the game farm fence at height of about 4-5 feet from ground surface and 1 foot away from the outside of the fence to limit ingress of wild animals. The electric fence is divided into two sections with flashing light indicators that are intended to show when a break in the connection has occurred, thus signaling a possible fence integrity problem.

Messrs. Haveman and Averill are the designated licensees for the existing Royal Tine Ranch game farm. Both of these persons have several years experience operating the Royal Tine Ranch game farm.

8. **Listing of any other Local, State or Federal agency that has overlapping or additional jurisdiction:**

(a) Permits:

Agency Name	Permit	Approval Date and Number
Department of Livestock	approval of quarantine and handling facility	Approved

(b) Funding:

Agency Name	Funding Amount
none	

(c) Other Overlapping or Additional Jurisdictional Responsibilities:

Agency Name	Type of Responsibility
Montana Department of Livestock	disease control
Montana Department of Environmental Quality (DEQ)	water quality, air quality waste management
Montana State Historical Preservation Office (SHPO)	cultural resources
Montana Department of Natural Resources and Conservation (DNRC)	water rights
Natural Resource Conservation Service (NRCS)	soil conservation
Flathead County Conservation District	stream crossings
U.S. Army Corps of Engineers (COE)	wetlands
Flathead County Weed Control District	weed control

9. **List of Agencies Consulted During Preparation of the EA:**

Montana Department of Livestock
Montana Department of Environmental Quality
Montana Bureau of Mines and Geology
Montana Department of Natural Resources and Conservation
U.S. Department of Agriculture, Natural Resource Conservation Service
Flathead County Conservation District

REFERENCES:

Haveman, Justin. 1998. Application For a Game Farm Expansion: June 1, 1998. 319 Sylvan Drive, Bigfork, Montana 59911.

Montana Fish, Wildlife & Parks, 1996. Decision Document and Environmental Assessment, Royal Tine Elk Game Farm. September 30, 1996. Region One FWP Office, Kalispell, MT.

Montana Fish, Wildlife & Parks, 1998. Game Farm, Fur Farm, or Game Bird Farm License No. 117 for Haveman & Averill Royal Tine Ranch. Date Issued 06/19/1998.

PART II. ENVIRONMENTAL REVIEW

This section of the Supplemental EA presents results of an environmental review of the Proposed Action. The assessment evaluated direct and indirect impacts and cumulative effects of the Proposed Action on the following resources of the physical environment: water, vegetation, and fish/wildlife; and the following concerns of the human environment: risk/health hazards. Other physical and human resources typically evaluated in an EA were not included in this analysis because no impacts are expected for the other resources. Impacts were determined to fall into one of four categories: unknown, none, minor and significant. For purposes of this EA, and in accordance with ARM 12.2.429-431, these terms are defined as follows:

EA DEFINITIONS

Cumulative Effects: Collective impacts on the physical and human environment of the Proposed Action when considered in conjunction with other past and present actions related to the Proposed Action by location or generic type. Related future actions must also be considered when these actions are under concurrent consideration by any state agency through pre-impact statement studies, separate impacts statement evaluation, or permit processing procedures.

Unknown Impacts: Information is not available to facilitate a reasonable prediction of potential impacts.

Significant Impacts: A determination of significance of an impact in this EA is based on individual and cumulative impacts from the Proposed Action. If the Proposed Action results in significant impacts that can not be effectively mitigated, FWP must prepare an EIS. The following criteria are considered in determining the significance of each impact on the quality of the human environment:

- severity, duration, geographic extent and frequency of occurrence of the impact;
- probability that the impact would occur if the Proposed Action occurs;
- growth-inducing or growth-inhibiting aspects of the impact, including the relationship or contribution of the impact to cumulative effects;
- quantity and quality of each environmental resource or value that would be affected, including the uniqueness and fragility of those resources or values;
- importance to the state and to society of each environmental resource or value that would be affected;
- any precedent that would be set as a result of an impact of the Proposed Action that would commit FWP to future actions with significant impacts or a decision in principle about such future actions; and
- potential conflict with local, state, or federal laws, requirements, or formal plans.

Reasonable Stocking Rate: The density of animals appropriate to maintain vegetative cover in pasture condition that minimizes soil erosion from major precipitation events and snowmelt. The methodology for determining reasonable stocking rate is presented under the evaluation for *Vegetation*, in the Checklist portion of this EA document. Factors to consider in determining an overall reasonable stocking rate include vegetation type and density, ground slope, soil type, and precipitation.

PHYSICAL ENVIRONMENT

1. WATER Would the Proposed Action result in:	POTENTIAL IMPACT				CAN IMPACT BE MITIGATED	COMMENT INDEX
	UNKNOWN	NONE	MINOR	SIGNIFICANT		
a. Discharge into surface water or any alteration of surface water quality including but not limited to temperature, dissolved oxygen or turbidity?			X		Yes	3(a)
b. Changes in drainage patterns or the rate and amount of surface runoff?		X				
c. Alteration of the course or magnitude of flood water or other flows?		X				
d. Changes in the amount of surface water in any water body or creation of a new water body?		X				
e. Exposure of people or property to water related hazards such as flooding?		X				
f. Changes in the quality of groundwater?		X				
g. Changes in the quantity of groundwater?		X				
h. Increase in risk of contamination of surface or groundwater?			X		Yes	3(a)
i. Violation of the Montana non-degradation statute?		X				
j. Effects on any existing water right or reservation?		X				
k. Effects on other water users as a result of any alteration in surface or groundwater quality?			X		Yes	3(a)
l. Effects on other water users as a result of any alteration in surface or groundwater quantity?		X				

AFFECTED ENVIRONMENT:

The 520-acre game farm site is located on west-facing lower slopes of the Mission Mountains near the east side of Flathead Lake. Several intermittent drainage channels extend through the game farm, with water flowing southward into two small closed-basin ponds or lakes near Highway 35 ("Elk Farm Lake" and "Potato Lake"). Water in these ponds does not appear to discharge to Flathead Lake; the spill point for the lakes would send overflow water to another closed basin (Deer Flats). Such overflow, however, occurs only during extremely high runoff events. Several small natural and man-made depressions in the primary channel in the game farm contain water most of the year. Surface water flows out of the game farm only during extreme precipitation and/or snowmelt events. During the spring of 1996 and 1997, unusually wet conditions resulted in a 25-foot rise of water levels in the two lakes referenced above; the combined surface area of the two lakes more than quadrupled in 1997 (Stolzenbach, 1997). Elk from the western enclosure of the Royal Tine Ranch game farm have access to the north edge of Elk Farm Lake, and the Ridgewood subdivision is located directly to the south and west of this pond.

Descriptions of water resources in the vicinity of the Royal Tine Ranch game farm are contained in report prepared by Lamb (1996) for the previous expansion EA, and a report prepared by Stolzenbach (1997) that evaluated flooding conditions in the vicinity of Elk Farm Lake and Potato Lake. Groundwater in the game farm area is present in relatively shallow glacial deposits and in underlying bedrock of the Precambrian-age Belt Series (argillite). The glacial deposits range in thickness from 10 feet to more than 180 feet and are predominant in Section 18, T26N, R19W (Stolzenbach, 1997). The 520-acre game farm in Section 7 (T26N, R19W) is located primarily on the bedrock material described above.

Private domestic wells completed in the study area range in depth from about 50 to 565 feet, with an average depth of 350 feet from 11 wells (Lamb, 1996). The Idlewise Trailer Court is located near the west side game farm enclosure and has a well for multiple-users that is 440 feet deep (Lamb, 1996). Wells are completed in the deeper bedrock material, which generally is confined due to upper unfractured bedrock and to some clayey zones in the glacial deposits. The two lakes in Section 18 (T26N, R19W) are located on glacial deposits and probably are not a significant recharge source to the bedrock aquifer in which the private wells are completed. Water for game farm animals in the 520-acre enclosure comes from several sources: groundwater well, water that collects in drainage bottom depressions, and a spring.

Water samples were collected for laboratory analysis of fecal coliform bacteria and nutrients (phosphorus & nitrogen) in 1996 from the intermittent drainage in the 520-acre game farm enclosure and from the northeast side of Elk Farm Lake where a seep enters the pond (Lamb, 1996). These samples indicated that water in the intermittent drainage had low levels of fecal coliform (2 organisms/100 milliliters) and nutrients (0.01 to 0.35 milligrams/liter phosphorus & nitrogen); however, the lake water had elevated fecal coliform (720 organisms/100 milliliters) and nutrients (0.02 to 1.43 milligrams/liter phosphorus & nitrogen) (Lamb, 1996). The exact source of the elevated parameters could not be determined; however, a major part likely came from use of the lakes by elk in the west side game farm, with minor inputs from horses and septic systems upgradient of the lakes (Lamb, 1996).

Based on the EA completed in 1996 for the 520-acre game farm expansion, it was concluded that the addition of elk to this enclosure would not increase the potential for water resources impacts to groundwater and surface water in the project area. After the flooding conditions that occurred in the vicinity of the lakes in 1996-97, three test holes were drilled in unconsolidated sediments to evaluate hydrogeologic conditions with respect to release and infiltration of excess water from the lakes (Stolzenbach, 1997). Infiltration occurred in a trench containing permeable sand and gravel, from which some water flowed to fractured bedrock (Stolzenbach, 1997). Bacterial monitoring of water from domestic wells in the discharge area showed no impacts from the lake water (Stolzenbach, 1997). Siphoning and discharge of excess water from the lakes continued in 1998 to lower the level of water in the lakes.

PROPOSED ACTION:

3(a) The addition of up to four bighorn sheep, four mountain goats, and mule/white-tailed deer is not expected to significantly change hydrologic conditions that exist within and downgradient of the 520-acre game farm enclosure. These additional animals could cumulatively increase nutrient loads to surface water downgradient of the game farm site during extreme precipitation events (see *Cumulative Effects* section below). The primary impact to water quality in the project area appears to occur from the west side game farm enclosure and from septic systems associated with subdivisions, trailer parks, and individual residences. Groundwater quality has a minor potential of being affected from runoff water that collects in the lakes near Highway 35 during extreme precipitation events.

NO ACTION:

The No Action Alternative would result in currently approved levels of game farming and periodic logging at the Royal Tine Ranch game farm. There are no documented impacts to water resources from current

elk game farm operation in the 520-acre enclosure; however, the west side 80-acre game farm enclosure probably has contributed to nutrients and bacteria in Elk Farm Lake because of its proximity to the lake.

CUMULATIVE EFFECTS:

As described above, the addition of goats, sheep, and deer to the 520-acre game farm enclosure could have a minor effect on cumulative impacts to surface water quality. Such effects would be expected to occur only during extreme precipitation events when surface water would exit the game farm area and travel downstream to the lakes near Highway 35.

COMMENTS:

Water quality protection practices could be required by the Montana Department of Environmental Quality (DEQ) if it is determined that a "concentrated animal feeding operation" (CAFO) permit is necessary because of significant reduction in vegetative cover. This condition, however, is not expected for the 520-acre game farm area. If any other suspected water quality problems are identified for the game farm, the DEQ would be responsible for addressing the issue(s). Refer to "Guide to Animal Waste Management and Water Quality Protection in Montana" (DEQ, 1996) and "Common Sense and Water Quality, A Handbook for Livestock Producers" (Montana Department of Health and Environmental Sciences, 1994) for further information on mitigation measures and CAFO permits.

Required Stipulations: None.

Recommended Mitigation Measures:

- Maintain a reasonable stocking rate in the game farm to mitigate potential impacts to surface water quality. Potential water quality impacts also could be minimized by disposing dead animals and excess fecal matter at a site that is isolated from surface water and groundwater (disposal must meet county regulations for solid waste).

- Utilize best management practices (BMPs) where surface water may exit the game farm site during extreme precipitation events to minimize the quantity of and improve the quality of water leaving the site. The BMPs may include earth berms, straw bale dikes, vegetative buffer zones, and/or silt fences.

REFERENCES:

Lamb, B., 1996. Potential Hydrologic and Water Quality Impacts of Proposed Game Farm, Royal Tine Ranch, L.L.C. Game Farm Application, Flathead and Lake Counties, Montana. Prepared for Montana Fish, Wildlife & Parks.

Montana Department of Environmental Quality (DEQ), 1996. Guide to Animal Waste Management and Water Quality Protection in Montana. Helena, MT.

Montana Department of Health and Environmental Sciences (DHES), 1994. Common Sense and Water Quality, A Handbook for Livestock Producers. Water Quality Division. Helena, MT.

Montana Fish, Wildlife & Parks, 1996. Decision Document and Environmental Assessment, Royal Tine Elk Game Farm. September 30, 1996. Region One FWP Office, Kalispell, MT.

Stolzenbach, R.D., 1997. Elk Farm Lake and Potato Lake, Floodwater Disposal Project, Woods Bay Area, Lake County, Montana. November 20, 1997. Consulting Hydrogeologist, Lakeside, MT.

PHYSICAL ENVIRONMENT

2. VEGETATION Would the Proposed Action result in:	POTENTIAL IMPACT				CAN IMPACT BE MITIGATED	COMMENT INDEX
	UNKNOWN	NONE	MINOR	SIGNIFICANT		
a. Changes in the diversity, productivity or abundance of plant species?		X				2(a)
b. Alteration of a plant community?		X				2(b)
c. Adverse effects on any unique, rare, threatened, or endangered species?		X				2(c)
d. Reduction in acreage or productivity of any agricultural land?		X				2(d)
e. Establishment or spread of noxious weeds?			X			2(e)

AFFECTED ENVIRONMENT:

The game farm is comprised of forested habitat, but the majority of the area has been previously logged and is currently managed for timber production. Tame pasture (Timothy and red clover) has been planted in created forested openings. In general, most trees within the proposed game farm are young and less than 12 inches in diameter. Herbaceous vegetation productivity within the forested habitat is variable depending upon degree of canopy closure, and probably ranges from a couple hundred pounds per acre to 1,000 pounds per acre in recently cleared sites. The game farm also contains rock outcrops within the forested habitat that produce very little herbaceous vegetation. Average annual forage production of the game farm site is estimated to range from 260,000 to 390,000 pounds.

The forested habitat in this area is comprised primarily of Douglas fir, grand fir, ponderosa pine, western larch, black cottonwood and aspen. Woody undergrowth on the game farm includes western snowberry, red osier dogwood, and alder. Herbaceous vegetation is primarily introduced grasses and forbs such as Timothy and red clover. There is a poorly developed riparian area within the game farm that originates at a spring in a moist meadow. The water flow in this drainage is intermittent and water surfaces periodically and forms pools in both natural and man-made depressions. Herbaceous vegetation, deciduous trees, and shrubs in these areas is characteristic of moist areas.

Noxious weeds are present on the game farm site. Spotted knapweed grows along logging roads and in some areas disturbed by recent logging, but it was not abundant or widespread. Canada thistle also grows in areas disturbed by recent logging.

PROPOSED ACTION:

2(a) The Proposed Action plans to place up to four adult male bighorn sheep and up to four adult male mountain goats on approximately 520 acres of an existing elk game farm. Productivity of this site is sufficient to support the 38 adult domestic bull elk that were in the enclosure in August 1998, plus four adult bighorn sheep and four adult mountain goats on a year-long basis without substantial supplemental feed. However, foraging activity by elk, sheep and goats would be expected to alter the plant communities and productivity of the game farm site would likely decline somewhat. A total of eight sheep and goats would consume about 14,600 pounds of forage per year. The 38 adult elk are estimated to consume approximately 152,570 pounds of forage annually. Combined annual forage consumption for 38 elk, four sheep, and four goats would be approximately half of the annual forage production. Assuming a total annual forage production of 300,000 pounds, a total of about 70 elk could potentially graze in the 520-acre game farm without supplemental feed, including the four mountain goats and four bighorn sheep.

2(b) There would be no conversion of any game farm area to irrigated pasture or agricultural crops. Areas where elk, deer, sheep and goats are fed or handled may lose vegetative cover and natural plant communities, but this is expected to be restricted to a small portion of the game farm. The overall dense vegetative cover at the game farm makes it very difficult, if not impossible, to visually observe game farm animals within the 520-acre enclosure. As a result, accountability of game farm animals is questionable.

2(c) No known threatened or endangered plant species occur in this area. There are records of U.S. Forest Service sensitive plant species within the general game farm area.

2(d) Development of the proposed game farm would not result in the loss of any irrigated cropland to irrigated pastureland.

2(e) Noxious weeds were apparent in disturbed areas during an August 1998 site inspection of the game farm site. There is a weed control program in place on the game farm and year-long grazing by game farm animals would probably not result in additional soil disturbance beyond that resulting from logging.

NO ACTION:

The No Action Alternative would likely result in the continuation of the present management of periodic logging and grazing of domestic elk.

CUMULATIVE EFFECTS:

There are no anticipated cumulative effects on vegetation resources associated with the proposed project.

COMMENTS:

Required Stipulations: None.

Recommended Mitigation Measures:

- Monitor the proposed game farm site for invasion of noxious weeds and treat affected areas in a timely manner.

- Provide supplemental feed and minerals to the elk, sheep, and goats at least during winter to alleviate excessive browsing in preferred shrubs.

PHYSICAL ENVIRONMENT

3. FISH/WILDLIFE Would the Proposed Action result in:	POTENTIAL IMPACT				CAN IMPACT BE MITIGATED	COMMENT INDEX
	UNKNOWN	NONE	MINOR	SIGNIFICANT		
a. Deterioration of critical fish or wildlife habitat?		X				3(a)
b. Changes in the diversity or abundance of game species?				X		3(b)
c. Changes in the diversity or abundance of nongame species?		X				3(c)
d. Introduction of new species into an area?		X				3(d)
e. Creation of a barrier to the migration or movement of animals?		X				3(e)
f. Adverse effects on any unique, rare, threatened, or endangered species?		X				3(f)
g. Increase in conditions that stress wildlife populations or limit abundance (including harassment, legal or illegal harvest or other human activity)?		X				3(g)
h. Increased risk of contact and disease between game farm animals and wild game?				X		3(h)

AFFECTED ENVIRONMENT:

The game farm is comprised of forested habitat but the majority of the area has been previously logged and is currently managed for timber production. During an August 1998 site visit, there were reportedly 38 domestic elk in the 520-acre enclosure; however, the game farm is licensed to graze more than 70 elk (application states up to 100 elk). Although there is no critical big game winter range or migration corridor through this area, this area is used by a variety of big game and other wildlife species. This general area supports 10 to 15 white-tailed deer per square mile, and elk and moose may occasionally pass through the area. Bighorn sheep are present on Wildhorse Island in Flathead Lake approximately 16 miles to the southwest. Other wild sheep herds occur in mountain ranges at greater distances.

This area represents good mountain lion habitat due the abundance of deer and elk in the surrounding mountains. This is a resident mountain lion population and they would be expected to occur in the area on a year-long basis. This area also supports a sizable black bear population. Use of this area by bears will vary seasonally and between years. Bears are expected to seasonally move through this area depending upon forage availability and, in some years, they may make considerable use of low elevation sites such as immediately adjacent to the game farm site.

Bald eagles (federally-listed threatened species) are breeding residents, spring fall migrants, and winter residents along the Flathead River north of Bigfork and along Flathead Lake. Eagles are known to nest along the Flathead River upstream from the game farm site (Gael Bissell, pers. comm., 1998). Peregrine falcons (endangered) are potentially migratory through this area but they are not known to nest in this area. The gray wolf and grizzly bear are two federally-listed (threatened) wildlife species occurring in the general area of the proposed game farm. Both these species potentially could pass through the forested habitat surrounding the game farm.

PROPOSED ACTION:

3(a) The Proposed Action plans to place up to four male bighorn sheep and four male mountain goats on approximately 520 acres of land. In addition, mule and white-tailed deer would be place in the 520-acre enclosure. Impacts to wild ungulates associated with fencing 520 acres (passage barrier and displacement) have already occurred and are not a part of this project. The existing 520-acre game farm does not have any perennial streams and would not likely impact any aquatic life resources under the Proposed Action (see *Water* section).

3(b) There is a possibility that wild deer may enter the enclosure especially during periods of drifted snow or deep snow accumulation in the winter. Deer have also been documented to crawl under game-proof fencing at sites dug by coyotes. Wild elk do pass through this area on occasion and may be attracted to the game farm especially during the rut. Wild elk that may enter the game farm and be exposed to domestic elk, bighorn sheep, and mountain goats would likely be destroyed in the enclosure rather than be released back to the wild. These impacts may affect individuals but not populations. Bighorn sheep are capable of climbing or jumping 8-foot high fencing if stressed during the rut (Bill West, pers. comm., 1998). The existing game farm fence crosses 25 to 30 degree slopes that results in some topographic advantage to wild and domestic big game animals for jumping the fence. Egress of sheep during winters when Flathead Lake is frozen would place Wildhorse Island within travel distance of the game farm. Escaped sheep could also potentially migrate to existing sheep herds in nearby mountain ranges.

Mountain lions and black bears are expected to pass through this area and may be attracted to the game farm due to the concentration of domestic elk (primarily lion) or the presence of elk feed (primarily bear). At least one bear has already entered and exited the enclosure, and mortally wounded a bull elk. Lions and bears are capable of entering the enclosure and, although live capture and removal are possible, it is not without risks. This may affect individuals but not populations. In addition, gray wolves and grizzly bears could potentially pass through this area and be attracted to the game farm elk. Wolves and bears are capable of digging under or climbing over the game fence. The existing electrified hot-wire around the fence and the stipulations associated with the current game farm license for supplemental feeding and disposal of carcasses minimize the potential for ingress of bears, wolves, and lions. Live capture and removal of a trespassing wolf or bear is possible. However, this is not without risks to the animal, and the loss of a wolf and bear from local populations in this area may be a cumulative impact to these species. In addition, bears that are chronic offenders may be purposely removed from the population either by lethal control, or by live capture and relocated to a zoo. Attraction of bears, lions, and wolves to the game farm may result in greater conflicts with humans in the area.

3(c) The addition of bighorn sheep, mountain goats, mule deer, and white-tailed deer would not affect the diversity or abundance of nongame species in this area.

3(d) There would be no introduction of a new species to this area.

3(e) The addition of sheep, goats, and deer would not require additional fence construction and would not further impact movement of big game species beyond the existing conditions.

3(f) The proposed game farm is not likely to cause impacts to bald eagles and peregrine falcons. However, the game farm without adequate mitigations could potentially impact gray wolves and grizzly bears. As stated above, the existing electric wire around the fence and the stipulations associated with the current game farm license help prevent ingress of bears, wolves, and lions. The proposed game farm would provide a concentrated food source for wolves and bears. In addition, bears might also be attracted to feed supplied to domestic elk, sheep and goats. Animals can be captured and removed alive, but this is not without risks to the animal.

3(g) Conditions that might increase stress to wildlife would not change over existing conditions. This includes: creation of a passage barrier by the existing game farm fence; flight hazard to fast pursuit forest raptors in pursuit of small avian prey; and attraction of bears, lions, and wolves to the game farm. Game farm fencing may also be a flight hazard to grouse and wild turkey.

3(h) There is a significant potential of domestic bighorn sheep, mountain goats, or deer to carry or become infected with a contagious wildlife disease or parasite such as tuberculosis, and then come in contact (through-the-fence, nose-to-nose, nose-to-soil, or ingress/egress) with wild deer, elk, or other wildlife. It is also possible that diseases and parasites carried by wild elk or deer could be introduced to domestic elk, deer, bighorn sheep, or mountain goats. Ingress of wild elk or deer would likely result in destruction of the trespassing animals if they can be located. Ingress animals may also be able to exit the game farm enclosure. Spread of a contagious wildlife disease may directly or indirectly (depending upon the nature of the disease) effect the human environment by reducing the number of wild deer and elk available for hunting or exposing hunters to diseases that are contagious to humans as well. Although release of a contagious disease in the wild could severely impact native wildlife populations, the risk of disease transmission from domestic to wild animals is very low and can be minimized by routine disease surveillance of the herd and maintenance of a game-proof fence.

As discussed in the *Vegetation* section, dense vegetative cover at the game farm makes it very difficult, if not impossible, to visually observe game farm animals within the 520-acre enclosure. Accountability of the animals, as required by statute, is questionable given the current system of operation at the game farm. Such as condition may result in significant additional time required by FWP personnel to inspect the game farm operation.

There is a potentially significant impact from ingress and egress of game farm animals resulting from the the rugged terrain, proximity of trees to the perimeter fence, and difficulty of monitoring the fence year-round. There have been suspected incidents of deer ingress into the 520-acre enclosure, and it has been difficult for the licensee to verify the presence or absence of ingress deer. Trees have been removed from about 20 feet within the inside of the existing game farm fence. The game farm fence is located on or near the property line and trees on adjacent land have not been cleared or have been cleared only for a short distance. The hundreds of trees located within falling distance of the game farm fence result in a high potential for the fence to be compressed by a falling tree; at least one incident of a tree fall on the fence occurred during the first few months of the fence placement. There is an electric hot-wire around the game farm fence that is monitored on a regular basis; two light indicators on the wire help to determine if damage to the fence has occurred, such as from a falling tree.

NO ACTION:

The area would continue to be used for grazing domestic elk and periodic logging. Ingress/egress would be very difficult, if not impossible, to determine under the existing conditions.

CUMULATIVE EFFECTS:

There are no anticipated significant cumulative effects on wildlife resources associated with the proposed project; however, the loss of a bear and/or wolf from local populations could have a minor cumulative affect on these species.

COMMENTS:

Required Stipulations:

The following stipulations are imposed by FWP for the Royal Tine Ranch game farm and are designed to mitigate significant impacts identified in the EA to below the level of significance:

(1) Place a 3/8-inch steel cable or steel pipe cross-bar at the top of the perimeter fence for the 520-acre enclosure to prevent fence compression should a tree fall on the fence. This cable would also add to the effective fence height and reduce the chances of ingress and egress of domestic and wild big game species. If fence integrity or ingress/egress becomes a problem, adjustment of fence requirements to include double fencing, additional electrification, or increased height may become necessary.

(2) The licensee must immediately comply with any disease control, surveillance, and/or testing requirements issued by the state veterinarian.

(3) Monitor the game farm fence on a weekly basis and immediately after major snow and rain events to ensure fence integrity is maintained. If snow buildup reduces the effective height of the perimeter fence to less than 8 feet, the licensee must remove snow on both sides of the fence, or increase the fence height, where necessary.

(4) The licensee must bring all game farm animals in the 520-acre enclosure to the handling facility annually for census, to check identification, and verify status of ear tags. Mule deer and white-tailed deer are not allowed in the 520-acre enclosure because it is too difficult to bring them in for identification and verification, and to differentiate the deer from possible ingress.

The stipulations listed above are imposed to mitigate potentially significant risk to wildlife posed by the proposed game farm from concerns related to diseases, fence integrity from falling trees, and the lack of a game farm representative that lives at the 520-acre enclosure site. Risk to wildlife from contact between game farm animals and wild game is potentially significant due to the site being located in an area currently utilized by wild game, the rugged terrain, and proximity to trees. Information provided by the stipulations would also help both the licensee and FWP to address ingress and egress incidents and to minimize contact between wild and domestic animals. These stipulations, in addition to fencing requirements, are expected to reduce the risk to wildlife to below significant.

(5) The game farm licensee must administer an antibiotic to sheep and goats prior to placement of the animals in the game farm. The prescribed antibiotic is to be determined in consultation with the state veterinarian.

(6) The risk of escaping bighorn sheep interbreeding with wild sheep can be eliminated by castrating domestic bighorn sheep prior to entering the enclosure.

The two stipulations above are imposed to mitigate a potentially significant hybridization and disease (A Strain *Pasteurella*) risk from game farm bighorn sheep and mountain goats. During the breeding period, some sheep would tend to have a strong desire to climb the game farm fence (to escape the dominant animals).

(7) Shooting shall not occur in the direction of nearby residences, and no shooting shall occur in and around the holding facility associated with the 520-acre enclosure (see Figure 1).

This stipulation is imposed to mitigate a potentially significant risk to public health and safety due to the proximity of residences to the game farm site.

Recommended Mitigations:

The following standard game farm management practices will help to minimize impacts to free ranging fish and wildlife species (also see mitigation measures in current game farm license for Royal Tine Ranch):

- Store hay, feed, and salt away from exterior fences or enclose in bear-resistant containers or buildings. Other standard bear mitigation measures may be appropriate.

- Feed game farm animals at interior portions of the enclosure and not along the perimeter fence. Due to the presence of both grizzly and black bears in this area, it is extremely important to limit the exposure of game farm animal feed to bears.

- Remove dead animals, excess fecal material, and waste feed from the game farm and deposit at an approved site not likely to be used by humans, domestic animals, and wild animals.

REFERENCES:

Bissell, Gael, 1998. MT Fish, Wildlife and Parks biologist. personal communication with Dr. Craig Knowles, Faunawest Wildlife Consultants. April 1998.

West, Bill, 1998. US Fish and Wildlife Service, Refuge Manager, National Bison Range. person communication with Dr. Craig Knowles, Faunawest Wildlife Consultants. April 1998.

HUMAN ENVIRONMENT

4. RISK/HEALTH HAZARDS Would Proposed Action result in:	POTENTIAL IMPACT				CAN IMPACT BE MITIGATED	COMMENT INDEX
	UNKNOWN	NONE	MINOR	SIGNIFICANT		
a. Risk of dispersal of hazardous substances (including, but not limited to chemicals, pathogens, or radiation) in the event of an accident or other forms of disruption?		X				
b. Creation of any hazard or potential hazard to domestic livestock?			X		Yes	4(b)
c. Creation of any hazard or potential hazard to human health?			X		Yes	4(c)

AFFECTED ENVIRONMENT:

The 520-acre game farm enclosure had approximately 38 elk during an August 1998 site visit, and potentially could have up to 100 elk. The fence is intended to be game-proof and is constructed according to state regulations and standards. Shooting of elk is allowed on the game farm and may occur with the proposed bighorn sheep and mountain goats.

PROPOSED ACTION:

4(b) Brucellosis and tuberculosis are potentially transmittable from bighorn sheep and mountain goats to cattle and from cattle to bighorn sheep and mountain goats. In addition, the bighorn sheep and mountain goats proposed for introduction into the game farm could potentially carry A Strain *Pastuerella* and lungworms (*Protostrongylus* spp.). This would be a major disease concern with wild bighorn sheep herds in northwestern Montana should any bighorn sheep or mountain goats escape from the game farm. Bighorn sheep infected with lungworms are extremely susceptible to pneumonia resulting from exposure to A Strain *Pastuerella* found in domestic sheep and goats animals (Keith Aunne, pers. comm., 1998). Two species of *Protostrongylus* noted to cause catastrophic die-offs of bighorn sheep have also been found in mountain goats (Schmidt and Gilbert 1978, Chapman and Feldhamer 1982).

Although the potential for interspecific lungworm infection exits, these parasites are widespread throughout the natural environment of bighorn sheep, and the four mountain goats and four bighorn sheep introduced into the game farm enclosure would not measurably change the risk of infection of *Protostrongylus* in wild bighorn sheep in northwestern Montana. However, the main disease issue will be if the domestic mountain goats and bighorn sheep are carrying A Strain *Pastuerella*. Diagnostic tests for this bacteria are available and can be conducted by taking nasal swabs from restrained live animals. However, a negative test does not necessarily confirm the absence of A Strain *Pastuerella* in sheep and goats that would be released at the proposed game farm.

Bighorn sheep exposed to A Strain *Pastuerella* usually die within a few days of exposure, and sheep entering the enclosure could be quarantined for a week to verify that they are not infected. Mountain goats, however, are carriers of the disease and should be treated with antibiotics prior to entry. *Protostrongylus* can be treated using an antihelmetic.

There is also a risk of disease being passed from bighorn sheep and mountain goats to domestic elk. The risk of disease being passed from bighorn sheep and mountain goats to other domestic livestock would be minimal if the fence integrity is maintained and appropriate mitigation measures (see *Fish/Wildlife* section) are followed. However, up to 6,000 trail rides per year may pass through the game farm enclosure and there would be opportunity for horses to acquire a disease

from game farm animals. The potential for disease transmission to domestic livestock and wildlife from game farm animals can be also be mitigated through DoL disease testing requirements. All animals placed on this game farm will be required to be tested for tuberculosis at the time of import, purchase, and/or transportation to the game farm. A test for brucellosis is required for all game farm animals that are sold or moved within the state, and is required for all game farm animals imported into Montana. Each game farm is required to have an isolation pen (quarantine facility) on the game farm to isolate any animals that are imported or become ill. The state veterinarian can require additional testing and place herds under strict quarantine should problems arise. Routine brucellosis and tuberculosis testing requirements for game farm animals offer a measure of surveillance that minimizes that risk. Failure to comply with these requirements is grounds for license revocation.

4(c) If tuberculosis or brucellosis were to be transmitted from domestic bighorn sheep, mountain goats, or domestic elk to wild elk and deer, hunters field dressing wild elk and deer would be subject to some risk of infection. Veterinarians and meat cutters working with diseased game farm animals are at risk of becoming infected with brucellosis or tuberculosis. Risk to human health from diseased animals could be significant. Spread of a contagious wildlife disease may directly or indirectly (depending upon the nature of the disease) affect the human environment by reducing the number of wild deer and elk available for hunting or exposing hunters to diseases that are contagious to humans as well.

Shooting activities in the game farm enclosure is a human safety concern with respect to residents that live near the game farm site. This issue was addressed in the 1996 EA and Decision Document for the 520-acre elk game farm expansion. A stipulation was included in the Decision Document and license that requires signs to be placed on the fence to warn of possible risks. The addition of up to eight mountain goats and bighorn sheep to the 520-acre game farm enclosure is not expected to substantially increase the amount of shooting beyond what may occur with the elk. In addition, the irregular topography and dense tree cover also provide natural mitigation to the potential of rifle bullets reaching the sparse number of residents near the game farm.

Bears, wolves, and lions attracted to the game farm animals and feed could pose a minor risk to local residents or other persons surrounding the game farm. The addition of goats and sheep to the 520-acre enclosure is not expected to substantially increase the number of predators in the area. The possibility of humans encountering predators in this area already exists due to the wild lands to the east of the game farm.

NO ACTION:

Additional risk/health hazards above and beyond what may occur with the existing game farm would not occur for the No Action Alternative.

COMMENTS:

The six standard game farm mitigation listed in the *Fish/Wildlife* section are applicable to this section, too. In addition, risk of disease epidemic or heavy parasite infections among domestic bighorn sheep, mountain goats and elk can be minimized by maintaining a reasonable game farm animal stocking rate in relation to the enclosure size, periodic removal of manure from concentration areas, and development of a disease immunization and parasite treatment protocol as applicable to domestic elk, bighorn sheep, and mountain goats.

REFERENCES:

Aunne, Keith. 1998. MT Fish, Wildlife and Parks biologist, personal communication with Dr. Craig Knowles, Faunawest Wildlife Consultants. March, 1998.

Chapman, J.A. and G.A Feldhamer. 1982. Wild mammals of North America. John Hopkins Univ. Press, Baltimore. pp 1008-1019 and 1036-1055.

Schmidt, J.L. and D.L. Gilbert. 1978. Big game of North America. Stackpole Books, Harrisburg, PA. pp 149-171.

SUMMARY EVALUATION OF SIGNIFICANCE CRITERIA

a. Does the Proposed Action have impacts that are individually minor, but cumulatively considerable? (A project may result in impacts on two or more separate resources which create a significant effect when considered together or in total.)

No, however, any action resulting in the loss of a trespassing gray wolf or grizzly bear might represent a cumulative impact to the local populations should other unavoidable man-caused mortality be high.

b. Does the Proposed Action involve potential risks or adverse effects which are uncertain but extremely hazardous if they were to occur?

Yes. An unlikely, but extremely hazardous event should it occur, would be the spread of a disease or parasite from domestic bighorn sheep or mountain goats to wild elk, deer, or sheep. The risk of this event occurring can be reduced by following mitigation measures listed in the *Fish/Wildlife* section.

c. Description and analysis of reasonable alternatives (including the No Action Alternative) to the Proposed Action whenever alternatives are reasonably available and prudent to consider and a discussion of how the alternatives would be implemented:

No Action Alternative: This alternative would avoid many of the potential impacts listed above. This site would likely continue being used for timber production and grazing by domestic elk. The No Action Alternative would continue the exclusion of wildlife from this site, but the risk of escape due to falling trees on the fence would remain high.

d. Evaluation and listing of mitigation, stipulation, or other control measures enforceable by the agency or another government agency:

This section provides an analysis of impacts to private property by proposed restrictions or stipulations in this EA as required under 75-1-201, MCA, and the Private Property Assessment Act, Chapter 462, Laws of Montana (1995). The analysis provided in this EA is conducted in accordance with implementation guidance issued by the Montana Legislative Services Division (EQC 1996). A completed checklist designed to assist state agencies in identifying and evaluating proposed agency actions, such as imposed stipulations, that may result in the taking or damaging of private property, is included in **Appendix A**.

FWP will require seven stipulations to mitigate potentially significant impacts from the Proposed Action. These stipulations will help both the applicant and agencies to minimize the risk to wildlife health from contact between game farm animals and wild game. These impacts are potentially significant because the site is located in an area currently utilized by wild game, has rugged terrain, and the perimeter fence is in close proximity to numerous trees.

REQUIRED STIPULATION #1

Place a 3/8-inch steel cable or steel pipe cross-bar at the top of the perimeter fence for the 520-acre enclosure to prevent fence compression should a tree fall on the fence. This cable or pipe would also add to the effective fence height and reduce the chances of ingress and egress of domestic and wild big game species. If fence integrity or ingress/egress becomes a problem, adjustment of fence requirements to include double fencing, additional electrification, or increased height may become necessary.

Restriction on Private Property Use

None.

Alternatives

Do not add a steel cable or pipe to the top of existing perimeter fence.

This alternative would not adequately address the significant risk to fence integrity from falling trees around the game farm perimeter fence.

Remove all trees within falling distance of both sides of the perimeter fence.

This alternative does not appear to be feasible because of land outside the game farm fence that is not owned by the licensees.

Benefits from Imposing the Stipulation

This stipulation is imposed to mitigate a significant risk of ingress/egress from trees falling on the game farm perimeter fence. The cable or pipe would also add to the effective height of the game farm fence which would help prevent ingress/egress, especially during the winter when snow may reduce the effective height of the fence.

Types of Expenditures the Stipulation Would Require

The stipulation would require approximately 18,000 feet of cable or pipe on the 520-acre perimeter fence. A maximum estimated cost for the materials would be about $15,000, plus labor for installation.

Stipulation's Effect on Property Values

None.

REQUIRED STIPULATION #2

The licensee must immediately comply with any disease control, surveillance, and/or testing requirements issued by the state veterinarian.

Restriction on Private Property Use

None.

Alternatives

Do not comply with disease control, surveillance, and/or testing requirements issued by the state veterinarian.

This alternative would not adequately address the potential increased risk to wildlife from diseases if the state veterinarian believes it is warranted.

Benefits from Imposing the Stipulation

This stipulation is imposed to conform to any disease concerns that the state veterinarian may have regarding the Royal Tine Ranch and game farms in general. An example is chronic wasting disease (CWD).

Types of Expenditures the Stipulation Would Require

Unknown at this time because requirements of the state veterinarian have not yet been imposed.

Stipulation's Effect on Property Values

None.

REQUIRED STIPULATION #3

Monitor the game farm fence on a weekly basis and immediately after major snow and rain events to ensure fence integrity is maintained. If snow buildup reduces the effective height of the perimeter fence to less than 8 feet, the licensee must remove snow on both sides of the fence, or increase the fence height, where necessary.

Restriction on Private Property Use

None.

Alternatives

Monitor the game farm fence on a different frequency, and don't maintain an 8-foot effective fence height.

This alternative would not adequately address potentially significant ingress/egress occurrences if the perimeter fence integrity is compromised. It is believed that weekly monitoring of the perimeter fence is adequate to detect potential problems on a timely basis. The existing electric hot-wire indicators will facilitate checking the fence for possible tree falls or other problems. If the fence height is not maintained at 8 feet because of snow pack, then the potential for ingress/egress increases significantly.

Benefits from Imposing the Stipulation

This stipulation is imposed to provide an adequate monitoring program for fence integrity and effective height.

Types of Expenditures the Stipulation Would Require

The stipulation would require a periodic checking of the game farm perimeter fence; however, the costs for doing this in terms of time for someone to check the fence should not be significantly different from the existing game farm management. Snow removal along the fence or increasing the fence height would add additional costs; however, these can not be determined until the need arises.

Stipulation's Effect on Property Values

None.

REQUIRED STIPULATION #4

> *The licensee must bring all game farm animals in the 520-acre enclosure to the handling facility annually for census, to check identification, and verify status of ear tags. Mule deer and white-tailed deer are not allowed in the 520-acre enclosure because it is too difficult to bring them in for identification and verification, and to differentiate the deer from possible ingress.*

Restriction on Private Property Use

This stipulation would restrict the placement of deer in the 520-acre game farm enclosure.

Alternatives

> *Do not have an annual check of all game farm animals.*

This alternative would not meet statutory requirements of verifying that all domestic animals are remaining in the game farm.

> *Allow deer in the 520-acre game farm enclosure.*

This alternative would not reduce the significant risk of domestic deer egress and the ability to detect wild deer ingress in the game farm.

Benefits from Imposing the Stipulation

Accountability of all game farm animals would be documented at least annually to verify the lack of ingress and egress from the game farm enclosure. By restricting the placement of domestic deer in the 520-acre enclosure, it would be easier to monitor for wild deer ingress in the game farm enclosure.

Types of Expenditures the Stipulation Would Require

The stipulation to have an annual check of all game farm animals would require time to roundup the animals; however, this activity is not considered beyond standard game farm management practices. The deer restriction would not result in an expenditure; however, income from the game farm could decrease from the value of deer that would not be allowed for the 520-acre enclosure.

Stipulation's Effect on Property Values

None.

REQUIRED STIPULATION #5

The game farm licensee must administer an antibiotic to sheep and goats prior to placement of the animals in the game farm. The prescribed antibiotic is to be determined in consultation with the state veterinarian.

Restriction on Private Property Use

None.

Alternatives

Do not administer an antibiotic to sheep and goats in the game farm.

This alternative would not adequately address a potentially significant risk from hybridization and disease (A Strain *Pasteurella*) associated with game farm bighorn sheep and mountain goats.

Benefits from Imposing the Stipulation

This stipulation is imposed to address a potentially significant risk from hybridization and disease (A Strain *Pasteurella*) associated with game farm bighorn sheep and mountain goats.

Types of Expenditures the Stipulation Would Require

Because of the limited number of domestic sheep and goats proposed for the 520-acre enclosure, the expense of antibiotics is expected to be minor.

Stipulation's Effect on Property Values

None.

REQUIRED STIPULATION #6

The risk of escaping bighorn sheep interbreeding with wild sheep can be eliminated by castrating domestic bighorn sheep prior to entering the enclosure.

Restriction on Private Property Use

None.

Alternatives

Do not castrate domestic bighorn sheep.

This alternative would not eliminate the desire of some bighorn sheep to climb the fence during the breeding period and the potential for interbreeding with wild sheep if egress were to occur.

Benefits from Imposing the Stipulation

This stipulation is imposed to provide a measure of safety for potential escape and interbreeding of bighorn sheep.

Types of Expenditures the Stipulation Would Require

Because of the limited number of domestic sheep proposed for the 520-acre enclosure, the expense of castration is expected to be minor.

Stipulation's Effect on Property Values

None.

REQUIRED STIPULATION #7

> *Shooting shall not occur in the direction of nearby residences, and no shooting shall occur in and around the holding facility associated with the 520-acre enclosure.*

Restriction on Private Property Use

This stipulation would restrict shooting activities from the holding facility area at the 520-acre game farm enclosure, and prevent shooting in the direction of nearby residences.

Alternatives

> *Do not have any shooting restrictions.*

This alternative would not provide public safety restrictions with respect to shooting in the game farm area.

Benefits from Imposing the Stipulation

This stipulation would provide some margin of safety to residents that live near the game farm enclosure, especially in the vicinity of the holding facilities.

Types of Expenditures the Stipulation Would Require

None.

Stipulation's Effect on Property Values

None.

PART III. NARRATIVE EVALUATION AND COMMENT

Wildlife use of the area and potential for through-the-fence contact with game farm animals (consider year-around use, traditional seasonal habitat use, and location of travel routes and migration corridors).

Through the fence contact: The proposed game farm is located in moderate to high density white-tailed deer habitat. Wild elk and moose on occasion may pass through this area, but the area is not suitable habitat for wild bighorn sheep and mountain goats. Wild elk would be expected to be attracted to the game farm by domestic elk, but they would not likely to be further attracted to the area by the presence of bighorn sheep and mountain goats. Nose-to-nose contact is most likely to occur between wild and domestic elk and deer, but unlikely to occur between domestic bighorn sheep, mountain goats, and other wild big game. Transmission of disease or parasites may occur during nose-to-nose contact, nose-to-body contact, and by contacting vegetation and feces along the fence line. Disease transmission may occur from wild ungulates to domestic elk, bighorn sheep and mountain goats, and from domestic elk, bighorn sheep and mountain goats to wild ungulates. Diseases such as tuberculosis are highly contagious and can be easily transmitted between domestic and wild big game species. Tuberculosis can also be transmitted to humans and is a serious health risk.

Chronic Wasting Disease (CWD) has been documented in game farm elk in several states and in Canada. Montana now has two suspect herds but there is no evidence that CWD is present in wild deer or elk. There is no diagnostic test for CWD in live animals and confirmation of the disease can only be made upon post mortem necropsy. However, CWD disease is believed to be confined to Cervids and has not been documented in Bovids.

Risk of disease transmission can be reduced by maintaining and enhancing the integrity of the enclosure fence, by maintaining a healthy domestic big game population, and by following the above listed mitigation recommendations. If the game farm is managed properly, the risk of disease transmission from domestic big game species to wild ungulates would likely be minimal.

Potential for escape of game farm animals or ingress of wildlife (consider site-specific factors that could reduce the effectiveness of perimeter fences built to standards outlined in Rule 12.6.1503A, including steepness of terrain, winter snow depths/drifting, susceptibility of fences to flood damage, etc.).

Fence integrity: The existing exterior fence consists of 8-foot high, 6-inch mesh, high-tensile big game fencing; supported by 11-13-foot long, $2^{3/8}$-inch diameter steel pipe set 3-4 feet into the soil and spaced at 20-foot intervals. Corner posts and braces are $2^{7/8}$-inch diameter pipe. The five drive-through gates consist of an 8-foot high, 2-inch diameter structural metal tubing frame, and reinforced with hog paneling or similar material. The gates have a double latch and single chain lock. A maximum 3-inch clearance is allowed between the bottom of the fences/gates and the ground surface. An electric hot-wire has been placed around the game farm fence at height of about 4-5 feet from ground surface and 1 foot away from the outside of the fence to limit ingress of wild animals. The electric fence is divided into two sections with flashing light indicators that are intended to show when a break in the connection has occurred, thus signaling a possible fence integrity problem.

The game farm is located on moderate to steep terrain. Slopes of 25 to 30 degrees are common. Overall, the site potential for fencing this pasture is poor to moderate. The steepest slopes at this site approach 30 degrees, while the majority of slopes are 10 to 20 degrees. The steeper slopes have already been shaped and graded with a bulldozer to facilitate fencing. All trees have been removed within 20 feet on the inside of the enclosure. However, few or no trees have been removed from the outside of the fence. The enclosure fence is situated on or near the property line and it may not be feasible to remove trees on the outside. The potential for fence damage by wind blown trees is high. Therefore, it is recommended that a 3/8-inch steel cable be secured to the top of the fence to prevent excessive fence compression should a tree fall on it. This cable would also add to the effective fence height and reduce the chances of ingress and egress of domestic and wild big game species.

The enclosure site is located at an elevation of 3,000 to 4,000 feet within a high snowfall mountainous area. The expected snow levels during winter vary greatly in relation to the amount of snowfall, and wind velocity and direction associated with storms passing through this area. This area has the potential to receive considerable snowfall in single storm events and cumulatively during the winter. Two to three feet of compacted snow on the ground can be expected in at least some winters at the higher elevations. The proposed game farm is located within forested habitat and the potential for drifting is very low. During winters of excessive snow cover, removal of snow along either side of the game farm fence, where necessary, may be required to prevent ingress/egress problems.

Proportion (%) of the total habitat area currently used by wildlife that would be enclosed or otherwise impacted.

The enclosure currently excludes resident wild white-tailed deer from 520 acres of year-long range. The addition of four bighorn sheep and four mountain goats to the game farm will not change the amount of land that deer are excluded from. The low elevation forest habitat at the game farm site is widely available to deer in other nearby areas. The game farm represents only 1 to 2 percent of this habitat along the east side of Flathead Lake.

REFERENCES:

Bissell, Gael. 1998. MT Fish, Wildlife and Parks biologist. personal communication with Dr. Craig Knowles, Faunawest Wildlife Consultants. April 1998.

West, Bill. 1998. US Fish and Wildlife Service, Refuge Manager, National Bison Range. person communication with Dr. Craig Knowles, Faunawest Wildlife Consultants. April 1998.

PART IV. EA CONCLUSION

1. **Based on the significance criteria evaluated in this Supplemental EA, is an EIS required? YES / NO**

   No. The appropriate level of analysis for the Proposed Action is a mitigated EA because:

   - all impacts of the Proposed Action have been accurately identified in the EA; and
   - no significant impacts were identified.

2. **Describe the level of public involvement for this project if any and, given the complexity and the seriousness of the environmental issues associated with the Proposed Action, is the level of public involvement appropriate under the circumstances?**

   Upon completion of the Supplemental Draft EA, a notice is sent to local newspapers, and other potentially affected interests, explaining the project and asking for input during a 14-day public comment period which extends from October 31 until 5 pm November 13, 1998. The Supplemental Draft EA is also available to the public from the FWP office in Kalispell at the address and phone listed below and in the *Introduction* section of this EA, and through the State Bulletin Board System during the public comment period.

3. **Duration of comment period if any:** 14 days

4. **Name, title, address and phone number of the Person(s) Responsible for Preparing the EA:**

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Faunawest Wildlife Consultants

Craig Knowles, Wildlife Biologist

APPENDIX A

PRIVATE PROPERTY ASSESSMENT ACT CHECKLIST

The 54th Legislature enacted the Private Property Assessment Act, Chapter 462, Laws of Montana (1995). The intent of the legislation is to establish an orderly and consistent process by which state agencies evaluate their proposed actions under the "Takings Clauses" of the United States and Montana Constitutions. The Takings Clause of the Fifth Amendment of the United States Constitution provides: "nor shall private property be taken for public use, without just compensation." Similarly, Article II, Section 29 of the Montana Constitution provides: "Private property shall not be taken or damaged for public use without just compensation..."

The Private Property Assessment Act applies to proposed agency actions pertaining to land or water management or to some other environmental matter that, if adopted and enforced without compensation, would constitute a deprivation of private property in violation of the United States or Montana Constitutions.

The Montana State Attorney General's Office has developed guidelines for use by state agency to assess the impact of a proposed agency action on private property. The assessment process includes a careful review of all issues identified in the Attorney General's guidance document (Montana Department of Justice 1997). If the use of the guidelines and checklist indicates that a proposed agency action has taking or damaging implications, the agency must prepare an impact assessment in accordance with Section 5 of the Private Property Assessment Act. For the purposes of this EA, the questions on the following checklist refer to the following required stipulation(s):

(1) *Place a 3/8-inch steel cable or steel pipe cross-bar at the top of the perimeter fence for the 520-acre enclosure to prevent fence compression should a tree fall on the fence. This cable would also add to the effective fence height and reduce the chances of ingress and egress of domestic and wild big game species. If fence integrity or ingress/egress becomes a problem, adjustment of fence requirements to include double fencing, additional electrification, or increased height may become necessary.*

(2) *The licensee must immediately comply with any disease control, surveillance, and/or testing requirements issued by the state veterinarian.*

(3) *Monitor the game farm fence on a weekly basis and immediately after major snow and rain events to ensure fence integrity is maintained. If snow buildup reduces the effective height of the perimeter fence to less than 8 feet, the licensee must remove snow on both sides of the fence, or increase the fence height, where necessary.*

(4) *The licensee must bring all game farm animals in the 520-acre enclosure to the handling facility annually for census, to check identification, and verify status of ear tags. Mule deer and white-tailed deer are not allowed in the 520-acre enclosure because it is too difficult to bring them in for identification and verification, and to differentiate the deer from possible ingress.*

(5) *The game farm licensee must administer an antibiotic to sheep and goats prior to placement of the animals in the game farm. The prescribed antibiotic is to be determined in consultation with the state veterinarian.*

(6) *The risk of escaping bighorn sheep interbreeding with wild sheep can be eliminated by castrating domestic bighorn sheep prior to entering the enclosure.*

(7) *Shooting shall not occur in the direction of nearby residences, and no shooting shall occur in and around the holding facility associated with the 520-acre enclosure.*

PRIVATE PROPERTY ASSESSMENT ACT CHECKLIST

DOES THE PROPOSED AGENCY ACTION HAVE TAKINGS IMPLICATIONS UNDER THE PRIVATE PROPERTY ASSESSMENT ACT?

YES	NO		
_____	X	1.	Does the action pertain to land or water management or environmental regulation affecting private real property or water rights?
_____	X	2.	Does the action result in either a permanent or indefinite physical occupation of private property?
_____	X	3.	Does the action deprive the owner of all economically viable uses of the property?
_____	X	4.	Does the action deny a fundamental attribute of ownership?
_____	X	5.	Does the action require a property owner to dedicate a portion of property or to grant an easement? [If the answer is **NO**, skip questions 5a and 5b and continue with question 6.]
_____	_____	5a.	Is there a reasonable, specific connection between the government requirement and legitimate state interests?
_____	_____	5b.	Is the government requirement roughly proportional to the impact of the proposed use of the property?
_____	X	6.	Does the action have a severe impact on the value of the property?
_____	X	7.	Does the action damage the property by causing some physical disturbance with respect to the property in excess of that sustained by the public generally? [If the answer is **NO**, do not answer questions 7a-7c.]
_____	_____	7a.	Is the impact of government action direct, peculiar, and significant?
_____	_____	7b.	Has government action resulted in the property becoming practically inaccessible, waterlogged, or flooded?
_____	_____	7c.	Has government action diminished property values by more than 30% and necessitated the physical taking of adjacent property or property across a public way from the property in question?

Taking or damaging implications exist if **YES** is checked in response to question 1 and also to any one or more of the following questions: 2, 3, 4, 6, 7a, 7b, 7c; or if **NO** is checked in response to questions 5a or 5b.

If taking or damaging implications exist, the agency must comply with § 5 of the Private Property Assessment Act, to include the preparation of a taking or damaging impact assessment. Normally, the preparation of an impact assessment will require consultation with agency legal staff.